

CONTROL APPARATUS CAPABLE OF LOW-SPEED DRIVING OF VIBRATION TYPE  
DRIVING APPARATUS, ACTUATING APPARATUS USING THE CONTROL APPARATUS,  
CONTROL METHOD CAPABLE OF LOW-SPEED DRIVING OF VIBRATION TYPE  
DRIVING APPARATUS, AND STORAGE MEDIUM STORING PROGRAM INCLUDING  
PROGRAM CODES CAPABLE OF REALIZING THE CONTROL METHOD

*ok to enter new*  
BACKGROUND OF THE INVENTION

*4-3-10h*  
1. FIELD OF THE INVENTION

[0001] The present invention relates to control of a so-called vibration type driving apparatus which uses an electro-mechanical energy conversion element to form traveling vibrations on an elastic body to relatively move the elastic body (a vibrating body) and a contact body.

2. DESCRIPTION OF RELATED ART

[0002] A vibration type driving apparatus which uses an electro-mechanical energy conversion element to form traveling vibrations on an elastic body to drive a moving body (a contact body) is used as an actuator from which a large driving force at a low speed can be provided.

[0003] Particularly, Japanese Patent Application Laid-Open No. 2001-157473 has proposed a vibration type driving apparatus using traveling waves which excites a traveling vibration wave on an elastic body and continuously drives a moving body in press contact with the elastic body to allow more smooth driving.

[0004] In the vibration type driving apparatus described in Japanese Patent Application Laid-Open No. 2001-157473, a vibrating